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For the Advocate of Science.

GEOLOGY, No. 12.

Recapitulation.—The action of rivers in transferring soil, and producing alluvial formations. The water of the Ganges sometimes contains one-fourth part sediment. Yellow River, of China, brings down 2,000,000 cubic feet of mud per hour. Gradual filling up of the Gulf of Mexico. Extension of the Deltas at the mouths of the Po and Rhone. Annual increase of the Delta of the Nile. Importance of alluvial agency in preparing the earth for man. Babylon, Nineveh, Thebes &c. built on alluvial. Approach of the Falls of Niagara to Lake Erie, and final drainage of the lake. Encroachment of the sea on the land in England, India &c. France and England supposed to have been formerly united. Effects of sudden inundations in Holland, Denmark &c. Inundation of Providence, R. I., in 1815. Prodigious force of the tides of the Amazon and Bay of Fundy. Review of the subject, and application of the foregoing facts in estimating the power of the Deluge of Noah. Geological proofs of the Mosaic history. Marks of the general deluge in nearly every country.

Flood of Deucalion, &c.—Subsequently to the general deluge there have been several partial ones. That of Deucalion occurred about the year 1500 before Christ, and ravaged all Thessaly. Three hundred years afterwards, a similar calamity happened to Attica. About the year 1100, a flood overwhelmed Syria, and destroyed many hundred thousand persons.

Date of the universal deluge.—The period at which the flood of Noah appears to have occurred, was 1656 years after the creation of man, and 2348 years before the Christian era.

Heathen traditions concerning it.—It is a remarkable fact that some account of this event is preserved in the memory of all nations. According to Sir William Jones, the oldest mythological works of the Hindoos contain the history of a deluge very similar to the history of the sacred writer. The inhabitants of Otaheite, when interrogated by a voyager concerning the origin of their nation, replied, that a long time ago the Great Spirit, being angry, dragged the earth through the sea, and their island being broken off, was alone preserved.

Remains of animals destroyed by the deluge.—There are copious remains of animals which appear to have been destroyed by the great deluge, found mixed with sand and mud, in large plains, in caverns, and in the crevices of rocks. Of these, the most remarkable is the fossil elephant, or mammoth, which abounds on the banks of nearly every river in Asiatic Russia. Near the mouth of the Indigerska are two considerable islands, said to be entirely composed of the bones of the mammoth, intermixed with ice and sand; the tusks of these animals are so perfect that they are dug up and sold for ivory. We may infer from the profusion of their skeletons, that these monstrous animals must have existed in hundreds and thousands.

A fossil mammoth found entire in Russia.—The entire body of a mammoth has been found in Siberia, buried in ice, with its flesh preserved so that the dogs devoured it when thawed. It had a mane along its back, and was covered with a coarse red wool, and with hair still coarser, indicating that it had been an inhabitant of cold climates. The height of this animal was nearly eighteen feet, and its hide was so heavy as to require a considerable number of men to carry it when stripped from the carcase. Its flesh, if we suppose the animal to have perished at the general deluge, must have been preserved from putrefaction in the ice which enveloped it, more than 4000 years. The entire body of a rhinoceros has also been discovered, buried in the frozen sands of Siberia.

The American mammoth, or mastodon.—The great animal whose bones and entire skeleton, have been found in the United States, was different from the real mammoth, and is called by zoologists the *mastodon*. It may be easily distinguished by its pointed grinders. Parts of the flesh, and the stomach of this animal have been found, the latter containing the remains of plants now growing in Virginia. We may conclude from this fact that the American mastodon has in all probability perished very recently, perhaps long since the deluge of Noah. The American Indians believe the animal is still living north of the Missouri.

Diluvial relics in caverns—the Kirkdale cavern &c.—In certain limestone caverns, immense quantities of bones are found in a tolerably perfect state of preservation, mixed with the clay and sand which form the floor of the cavern. These caverns abound in Germany and Hungary, and lately one of the same kind has been discovered in England. Here, it is supposed by some eminent writers, the animals fled for protection from the terrible catastrophe of which they were the victims. Intermingled in wild confusion, here lie the bones of the hyena, the tiger, the bear, and the wolf,—of the elephant, rhinoceros, horse, ox and deer,—of the rabbit, rat and mouse,—of larks, pigeons and other species of birds. Their bones are in many cases broken and mangled, and even exhibit the marks of the teeth of the ferocious beasts by which they were devoured. You may imagine the scene of havoc that would take place, when many animals of as many diverse habits were crowded together to escape the destroying visitation of the deluge, and with no other food than the flesh of each other. In the Kirkdale cavern, in England, the broken and gnawed bones of hyenas abound. This cavern is supposed to have been principally a retreat for the hyena, as this animal is known to devour its own species, and also to eat the bones of its prey.

Bigbone lick, in Kentucky.—A remarkable collection of bones is met with in the northern part of the state of Kentucky, mixed in immense numbers with the clay which forms the soil, at the location of a salt lick. The place has been named, from this circumstance, Bigbone lick. Here are buried the remains of the mastodon, elephant, ox, elk, deer, and many other animals, some kinds of which continue to inhabit the wilds of North America; but the greater part no longer live. The spot has been repeatedly visited by naturalists, and wagon loads of the bones have been carried away from time to time. This vast concourse of skeletons was no doubt entombed by the general deluge.

Having now completed my brief sketch of the *primary*, *transition*, *secondary*, *tertiary*, *diluvial* and *alluvial* classes, there remains for consideration the class of *volcanic* and *basaltic* rocks. This class I will introduce in my next number. S.

For the Advocate of Science.

SYSTEM, OR CLASSIFICATION.—No. 4.—[CONCLUDED.]

My last number completed our rapid survey of the animal kingdom, which we have followed from creation's lord, placed on the pinnacle of organized existence, down to the little monad, or the sponge, at the lower extremity of the scale. From this point let us pass over to the second grand division, and examine briefly, the vegetable world. This also embraces an extensive range of diversified materials. Contrast, for instance, the giant oak of the forest, with the delicate mould of the dark and humid vault,—or the resinous and combustible pine, with the *fontinalis* of northern Europe, a plant used as a lining for wooden chimneys, to preserve them from fire.

In the arrangement of plants, the systematizing genius of Linnæus is again conspicuous. The mode of classification by him introduced, is, with a few improvements, that commonly taught in our schools. It is based on the stamens and pistils of the flower; and like the classification of quadrupeds, founded upon the teeth,

frequently groups together genera differing widely in habit and appearance. Nevertheless, it offers facilities to the learner, not presented by some other excellent systems, which are founded on more general features of resemblance.

The modified Linnæan arrangement of plants, distributes them in twenty-one classes. In regard to their distinctive characters, I will simply state in general terms, that they depend upon the number and arrangement of the stamens. The last class, however, comprises those in which the parts of the flower are not discoverable: such are the mosses and the mushroom tribe. The classes are in general very easily ascertained. The orders depend, in twelve of them, simply on the number of the pointals, and in the remainder, on the number of the stamens, or some feature of the seed vessel.

But the classification of plants embraces little more than the technical part of botanical science. Vegetable physiology opens to us a most interesting and instructive field of inquiry. We shall find an exhaustless store of amusement and delight, in the varied and wonderful means by which the ends of their being are accomplished, from the first germination of the seed, through the diversified stages of its growth, maturation and decay, occupying, as may be, a life of a few days, or a centennial existence.

If, for instance, we examine the means provided for the dissemination of seeds, we see some forcibly scattered, as from the hands of the seedsman, by the sudden bursting of their envelope. Some are furnished with a pappus, or with an inflated appendage, to float them like balloons before the wind. Some are so light and minute as to rise in the atmosphere like particles of dust, and thus to people the most obscure recesses, or the loftiest mountains. Some have an awn, or head, which contracts and lengthens with the alternations of moisture and dryness, affording to its adherent embryon a sort of locomotive faculty. Some are adapted for swimming on the water, and are thus carried by the current, or driven by the breeze, to plant colonies beyond the ocean. Some are covered with burrs, or with a viscous secretion, which attaches them to whatever they touch, to be conveyed and deposited in all directions.

For their protection against destructive agents, seeds exhibit many admirable contrivances. Some are encased in a bony shell, some in a thorny armor; some enveloped in a poisonous rind, or berry, and some in a pulpy mass, to serve the purposes of a defence from animals—a protection from the wintry frost—a matrix for their germination, and nourishment for the infant plant.

We may also notice the peculiar habits of certain vegetables, adapting some or other of them to almost every possible situation. Some spend their days, and perform all the duties of life, entirely submerged in water, or floating loosely upon its surface. Some depend on others for support, appropriating to themselves the nourishment prepared by the tree or shrub to which they are attached. Some are destitute of root, and live in the air, by the absorbing operation of their leaves. Of this latter kind, the *ærial epidendrum* of the East Indies is worthy of especial notice. It lives for years, suspended by a cord from the ceiling, annually putting forth fresh and beautiful leaves and fragrant flowers. But I must take leave of the vegetable world, with the remark, that the phenomena at which I have glanced, are a very small proportion of those that crowd upon us, at every stage of our progress in this delightful field of inquiry.

From the animal and vegetable kingdoms, we now pass to a brief consideration of the remaining natural division; stepping over a well marked line of distinction between the domain of the vital principle, and the province of mechanical and chemical laws. The nature of the objects comprehended in this department, precluding any rigid system of classification, I shall be spared from more than a few general remarks.

Mineralogy proper, embraces in its limits the chemical composition and the various physical characters of the particular substances that compose the surface of the globe. These are divided and subdivided, according to their component principles, whether metallic or non-metallic; whether acidiferous, or consisting chiefly of silex, of alumine, or of magnesia. The fracture of a mineral, its texture, its weight, and other physical properties, are also important specific characters.

Mineralogy must be studied in the cabinet. Before the student can accurately distinguish one mineral from another, he must be presented with the specimens. With respect to the interest which the study affords, I will merely ask the reader to call to mind, for a moment, some one of his acquaintances whom he knows to have engaged in it. Its utility none will deny, when it is known that many of the necessaries and comforts of life are derived from the bowels of the earth. For want of a little mineralogical knowledge, a ship load of a glittering micaceous rock was once sent from this country to England, for silver ore. Often is the yellow sulphuret of iron mistaken for the ore of gold, and the golden hopes of the ignorant possessor destined to mortifying disappointment.

More imposing and inviting, though not more useful, is geology, which has for its object the position, composition and structure of the various strata that compose the crust of the earth. Geology teaches that these strata preserve, throughout the circumference of our planet, a uniform situation with relation to each other. Hence the geologist will tell us, that a search for coal in the district covered with granite, or with crystallized limestone, is worse than useless. He will tell us that by digging for an age, we will not meet with salt under our primitive limestone. He will tell us that the traveller on the lofty Alleghany treads on the same rock as the Indian hunter on the Rocky Mountains, though separated from him by the immense western territory, composed of numerous strata deposited in the intervening basin. He will tell us that the adventurer on Mount Blanc presses with his eager foot another projection of the same formation, although the mighty Atlantic interposes his flood of waters, studded with many a fleeting sail.

But the most imposing part of geology is that which treats of the previous state of our globe. In nearly all the strata above the primitive rocks, we find a history of their formation, recorded by the remains of animals now extinct—"the medals of creation, but without a date." These inform us that there was a day when the face of the earth was covered by the great deep; that, at a subsequent period, the lower orders of the animal world started into being; that, in a later day, the brute inhabitants of the land—all manner of four footed things began their existence; and that lordly man was the last and noblest work of God. We learn from these what strata were deposited from the bosom of the calm, unruffled waters, and what from the devastating action of the sudden flood, or the dashing mountain torrent. Here, we are told, whilst this stratum was forming, the ocean covered the spot with his briny waves; and here, perhaps separated from the former only by a thin bed of clay, the deposition was from a lake of saltless water. The impression of a single shell may decide, that a rock in the northern wilds of America, is the same in age as that which skirts the base of the lofty Andes, or the towering Himlaya.

In this part of geological inquiry, the student perceives the necessity of some information in zoology, and the other branches of

natural history. By his intimate acquaintance with the animal world was Cuvier enabled to establish with certainty, so many genera of the animals of a former world, often from the inspection of a single bone. "There are laws of living beings," says he, "that require the coöperation of the different parts of every animal; and therefore when one part changes, all must consequently change. If an animal have the intestines so constructed as to digest flesh, it is necessary that his jaws and teeth should be so constructed as to divide and devour it, his claws to seize and tear it, and his organs of sense and motion to perceive at a distance, and to pursue it. It is thus from one of the parts, that the corresponding whole may be detected."

The remains of the testaceous animals, found so abundantly in many strata of the earth's surface, were supposed by the celebrated Tournefort, to be vegetating stones, that had grown from a seed! But they have since been granted a more noble station. Shells chiefly abound in the deeper formations; and as we approach the surface, they give place to animals progressively higher in the scale of creation. We then find the enormous saurian, or lizard family, and the gigantic mastodon and mammoth. Few remains of the bird class have been discovered; and the bones of the human species are never met with, if we except the entire skeleton of a man found in Guadaloupe, in a *recent* calcareous sandstone, and a similar one in Cornwall.

I cannot leave this part of the subject, without mentioning a few of the most extraordinary animals whose former existence has been thus demonstrated, but whose race has totally disappeared from the earth.

The *icthyosaurus*, or fish lizard, the skeleton of which is found in the secondary strata of England, was a sea animal, holding a place between the fish and the lizard, and furnished with paddles instead of feet, for rapid motion on the water. The orbits of the eyes, in some of the largest species, were eight or ten inches broad. The *plesiosaurus* resembles it in some respects, but has a slender neck, longer than its body, composed of thirty vertebræ. It is supposed to have swam on the surface of the water, with its neck arched, ready to dart upon its prey. Some of these were twenty feet in length. The *megalosaurus* is another genus, supposed by Cuvier to have exceeded seventy feet. But the most extraordinary animal yet discovered, is, in the opinion of Cuvier, the *iguanodon*, a nondescript herbivorous reptile, double the length of the largest living crocodile. His teeth resemble those of the herbivorous mammalia, and were evidently designed for mastication. The *ornithocephalus* was an animal whose fossil skeleton was found in the limestone of Germany. It has a bill longer than its body, and is supposed to have been a flying quadruped, like the bat. The entire body of a fossil elephant was recently found in Siberia, imbedded in ice, and so well preserved that the dogs devoured it when it was detached. In Ireland, the antlers of a fossil elk were lately discovered, measuring eight feet in length, and fourteen feet from tip to tip.

I have now completed my outline of the comprehensive chart, the exploration of which is the end and aim of the naturalist. The study of nature is not the study of isolated facts. It is an examination of cause and effect—of the means by which phenomena are accomplished, and of the objects intended by certain contrivances. Every thing in this mighty plan is linked together in one unbroken chain, each having its proper allotment in the harmonious whole; so that the attentive observer of nature cannot fail to agree with the poet, that there is not any thing "made in vain, or not for admirable ends." It is this wonderful and universal design and contrivance that gives its chief relish to our inquiry into the natural world—a design which no one can deny, unless he is willing to agree with a certain Frenchman, who asserted, that it is as ridiculous to say that the eye was made for vision, as that stones were made for the breaking of heads!

Before concluding these remarks, I would remind those of my readers who are not yet trammelled by the settled occupations of life, that youth is the time to commence the study of nature. When the mind is suffered to move along in a fixed track, bent on the single object of a trade, or a profession, there is little prospect that it will ever deviate from the course dictated by a selfish interest. But when, in the vigor and freshness of the morn of life, it acquires a relish for intellectual pursuits, beyond what selfishness would prescribe, it becomes amplified and ennobled, and its possessor becomes qualified to hold that rank in the scale of creation, for which man is adapted by his intellectual endowments. And when the lapse of years shall have blunted the appetites and passions, and estranged them from the sensual and sordid objects of a toilsome world, there will yet remain, with all its wonted relish, this exhaustless source of enjoyment; then will be gathered a bountiful harvest, the seeds of which were sown in the spring time of existence; and then will every pebble, every flower, and every creeping thing, cheer the footsteps of gray-haired age, in his decline to the grave, and direct him with becoming reverence to that power "whose hand hath made them all."

ARANEA.

For the Advocate of Science.

ON THE INSTINCT OF PLANTS.

Speculation, or hypothesis, abstractedly considered, is of little advantage to science. Much benefit, however, often results from the collection and arrangement of important facts, and from the observations and inquiries to which the zealous advocates of conflicting theories are prompted. The subject of this essay involves some speculation, but perhaps not more than will tend to excite inquiry,—to whet the appetite, and to afford a seasoning for more solid food.

There has always been much difference of opinion, as to the cause of the various motions of plants; why some flowers close their petals on the approach of rain or of night, whilst others expand on the first impression made by the evening dew; why some droop to avoid moisture, or to shelter themselves from the burning sun, and others are enlivened to imbibe the former, or to enjoy the genial influence of the latter, and even to "watch, as it moves, the orb of day;" why some vegetables of the nervous temperament shrink with feminine sensibility from the gentlest touch, like the soft and delicate female, nurtured in the green house of the city, whilst others, like the hardy husbandman, who finds health in a life of continual exposure, unfold their vegetation and their bloom to the angry storm, and shun the protection of man. All agree that the preservation of the tender embryo, or some other important object, is attained by these movements, but the means by which they are performed have not been satisfactorily determined.

To analyze the subject, and to bring it properly into the sphere of our mental vision, it will be necessary to examine separately, these operations of the vegetable economy. In the first place, let us consider the sun flower, which has long been noted for following the sun in its daily course.

It is the general impression that the disk of the common sun flower (Helianthus *annuus*, a native of Asia, and also of Western America,) presents itself to the rising sun, and moves so as to preserve that relative situation throughout the day, return-

ing in the night to its former position, again to welcome the morning. This movement is supposed to be dictated by an instinctive faculty of the flower, which apprizes it of the necessity there is for a supply of heat and light in order to perfect its seeds. But I am persuaded, from actual observation, that the intelligence of the sun flower has been much overrated; and that its position seldom or never changes during the day, except in very dry weather, or when the sun is very hot. In these cases the motion is a simple nutation towards the sun, caused by the withering and relaxation of that side of the stem which is most exposed to the solar heat. Even here, the supposed purpose is not gained; for we may observe that in the middle of the day, when the sun has most power, the disk of the flower is so much inclined towards the earth, as not to receive a single solar ray for several hours.

It is true, however, that the face of the sun flower, in common with many other compound flowers, is mostly inclined to the south. There is a species indigenous to our own neighborhood, which answers nearly, though not precisely, to the description of HELIANTHUS *decapetalus*, in which I have observed this fact more conspicuously than in the garden plant. It grows from three to six feet high, and bears numerous flowers, about two inches in diameter, shaped like those of the other species. Very rarely have I seen any of them facing the north. Several plants which grew on the north-western border of a dark wood, had their flowers turned from the forest, and presented nearly toward the north-west, from which direction they received the most light.

Now the flower itself is entirely passive in this operation; for before it is expanded, the stem that supports it has always assumed that inclination which renders the southern aspect of the flower unavoidable. This case of *Instinct* is therefore resolved, partly into the physical effect of heat, and partly into the influence of light upon the direction of the growing branches, entirely independent of any action or sensation of the flower itself: the effect of light upon the direction of the growing vegetable will be spoken of in another place.

As cold and moisture are oftentimes injurious to the delicate rudiment of the fruit, many flowers are observed to droop on the approach of rain, or the falling of the evening dew, so as to form a shelter for the enclosed embryo. The garden pea (PISUM *sativum*) exhibits this phenomenon, a considerable time before the rain commences; and on this account has acquired much celebrity for its wonderful power of predicting a storm. The manner in which cold and moisture operate in this case, is now proved to be, as far as relates to the flower, purely mechanical. They exert a chilling and benumbing influence, rendering languid the circulation of the sap, and consequently producing the effect just described. The motion of the flower and the beneficial result of it, may be considered by some, merely a casual coincidence; but these coincidences are so numerous, and so often conducive to the welfare and perfection of nature's works, that few observing and reflecting minds have ever been able to withhold their acknowledgment and admiration of a contriving omnipotence by which they were designed.

Many flowers open and close their petals at certain hours of the day. Linnæus formed of these his *Horologe*, or Watch of Flora. Our native evening primrose (ŒNOTHERA *biennis*) exemplifies this fact, by suddenly expanding at sunset. To discover the cause of this sudden expansion of the petals, let us suppose ourselves stationed at the side of an Œnothera, in the season of its blooming, about half an hour or an hour before sun-set. The leaves and tender branches are at first drooping from the effects of the heat; but very soon they become erect and vigorous in appearance, showing that the fluids of the plant are in active circulation. The flower bud now swells, but is prevented from opening by the calyx which surrounds the lower half of its length, enveloping it like a tube. The motion of the sap, and the vigor of the plant rapidly increase till about sun-set, when the calyx, no longer able to resist the efforts of the flower to burst its bonds, is suddenly rent nearly its whole length; the immediate consequence of which is as sudden an expansion of the beautiful yellow petals. The flower remains open during the night, and then withers under the morrow's sun, never again to enjoy life. Perhaps the bud is not sufficiently matured to overcome by its expansive force, the tube that encloses it: in this case, it will grow in the night, and then languish throughout the day in patient imprisonment, waiting for the invigorating moisture and coolness of evening.

That the physical structure of the calyx is the sole cause of the curious manner in which the primrose blooms, we may readily convince ourselves by removing that obstruction early in the evening; when we shall observe a gradual opening of the flower, as in other plants: or we may produce the same effect instantaneously, by stripping off the fettering calyx about sun set. By thus forestalling nature's tardy movements, I have exhibited to a company of visiters the novel spectacle of an Œnothera in full and fragrant bloom, a few moments after I had brought it in my hand from its native field, covered only with beautiless buds.

BOTANICUS.

[*To be Continued.*]

THE ADVOCATE OF SCIENCE.

Eighth Month 1, 1833.

We have had to exclude several articles from this number of the paper, among which is the reply to the other question of "A Querist," and a communication from "Franklin." They shall appear in our next.

PUBLIC BATHS.

In all tropical countries, and in many of northern latitude, public baths constitute an important consideration with the natives. It is unnecessary to mention their convenience and utility. Those who walk our streets and know what it is to suffer from such intense atmospheric heat as we have lately had, can form some idea of the disadvantages of *not* having them. We are rather inclined to think, if our city councils would come to the conclusion to erect public baths in our public squares, our citizens generally would applaud their wisdom, with much zeal; by making a very moderate charge for the use of such baths, to say the least, they would reap a very handsome interest on the money so expended. We do not see any objection that can be urged against the measure, while at the same time it is no credit to the city to be without these important promoters of cleanliness and health.

FLINT'S LECTURES.

We have adopted the hint of our correspondent "Scrutator," relative to the selection of Miscellanies from Flint's Lectures on Natural History. We call the attention of our readers to an extract from that work, in the present number, headed *Antediluvian remains in America*. The cemeteries and other works of a by-gone race of beings, with which some parts of the western states abound, afford a subject of much curious and interesting speculation to the generation of men now on the stage of existence. Are they not memorials of the civilized and cultivated ancestry of our present aboriginal tribes—relics of a powerful, enlightened and happy race of men who once occupied the soil of the far west!

DR. GODMAN'S RAMBLES OF A NATURALIST.

T. T. ASH—12 mo. pp. 176.

EVERY thing which relates to the character and researches of this lamented naturalist, is a subject of much interest to his countrymen. We have rarely perused a work with more satisfaction, than that which bears the above title; though small, yet it is replete with useful intelligence, and though containing nothing but what may be observed in an every day ramble, its language is so simple and pleasing, that we are led to regret its di-

minutive size. It was originally published in "The Friend," a religious and literary paper of this city, edited by Robert Smith.

We regret we cannot copy the whole into our columns. No person could refuse to spend two or three hours in perusing it, since it would more than repay him for the time so employed. We will give an abstract, the most of which will be little else than extracts.

From a short biography connected with it, we learn, Dr. Godman was born in Wilmington, Del., about the year 1795. Like many others who have transmitted an honest and enviable fame to posterity, the greatest contests he had to encounter were with poverty; there is some ground given to the supposition that he was wronged of his patrimonial estate. In his 15th year he was bound apprentice to a newspaper printer;—an uncongenial occupation; according to his own language, it was cramping his genius "over a fount of types, where there are words without ideas." We are willing to forgive his prejudice against our profession, considering his youthful years, and that it was reasonable he should entertain a dislike to an occupation he was *compelled* to adopt. But it is the province of genius to generate ideas from whatever materials are placed within its reach. A man cannot condemn a block of marble because nature has not bestowed upon it that beautiful proportion which the chisel of the artist should produce.

In the year 1814, he became a sailor, under Commodore Barney, in the Chesapeake, and was engaged at the bombardment of Fort M'Henry. He did not work at printing after this time, though he contracted a hypertropy of the heart previous to abandoning it. In April, 1815, he accepted an invitation from Dr. Luckney, of Elizabethtown, who, touched with his misfortunes, and captivated by his genius, offered him a home, and all the facilities in his power for studying the profession to which he so ardently aspired. Here he studied intently; and in six weeks acquired more medical knowledge than most students do in a year. But a circumstance occurred which led to the premature separation of the student and his friend. One or both were requested, by the political party to which they belonged, to deliver orations on the approaching 4th of July. Dr. Luckney, agreeably to his appointment, appeared and read an address; but attempts were made by the opposite party to offer insult and create disturbance. Young Godman, indignant at their conduct, and manifesting feelings natural to men of generous dispositions, not only refused to deliver what he had prepared, but resolved to return again to Baltimore. Dr. Luckney speaks of the oration he had written, and which was left with him, as not unworthy of Patrick Henry.

At Baltimore he became a pupil of Dr. Hall. But his pecuniary distress was so great that he had to relinquish the study of medicine. In a letter to his benefactor, after reciting a discovery he had made of his *real* age, from an old book of his father's, which was 21 years on the 20th of December, 1815, he writes in the following affecting style:—

"Before I was two years old I was motherless—before I was five years old I was fatherless and friendless—I have been cast among strangers—I have been deprived of property by *fraud*, that was mine by right—I have eaten the bread of misery—I have drunk the cup of sorrow—I have passed the flower of my days in a state little better than slavery, and have arrived—at what? Manhood, poverty and desolation." Who would think that one whose cup of bitterness was so filled up, was destined to become the pride of his profession, and to stand among the most conspicuous and gifted disciples of nature?

A month after, he found a patron in Professor Davidge, and continued to study with Dr. Wright, partner of the Professor. Here he pursued his studies, and on the 7th of February, 1818, became a graduate of the Baltimore College. In the course of its sessions in the autumn of 1817, Professor Davidge was disabled by an accident, for several weeks, and Mr. Godman was appointed to supply his place. According to Professor Sewall, he performed the duties of his station with admirable success. "He lectured with such enthusiasm and eloquence, his illustrations were so clear and happy, as to gain universal applause; and at the time he was examined for his degree, the superiority of his mind, as well as the extent and accuracy of his knowledge, were so apparent, that he was marked by the professors of the University as one who was destined at some future period to confer high honor upon the profession."

The first location of Dr. Godman as a physician was at the village of New Holland, on the banks of the Susquehanna; but he remained there a few months only; removing near Baltimore, on the Patapsco. It seems a country life was not consonant with his disposition; for in one of his letters he expressed hopes of being recalled to Baltimore, to fill a station in the University. It was at his residence on the Patapsco he gleaned the materials for his "Rambles." Here his life was almost solitary; with the exception of those whom he saw on his professional visits, he rarely beheld a white man, no neighbors living within a mile or two. "The white inhabitants are few in number, widely distant from each other, and manifest, in their mismanagement and half indigent circumstances, how trifling an advantage they derive from the thraldom of their dozen or more of sturdy blacks, of different sexes and ages. At some seasons, the white people are busy attending market, and even when they are at home, they are poorly suited for companionship."

The house in which he lived was kept by a widower: "Of books I possessed very few, and those exclusively professional; but in this beautiful expanse of sparkling water, I had a book opened before me, which a lifetime would scarcely suffice me to read through. With the advantages of a small but neatly made and easily managed skiff, I was always independent of the services of the blacks, which was ever repugnant to my feelings and principles. I could convey myself in whatever direction objects of inquiry might present, and as my little bark was visible for a mile in either direction from the house, a handkerchief waved, or the loud shout of a negro was sufficient to recal me, in case my services were required."

Dr. Godman remained at this place about two years; Dr. Drake, of Cincinnati, inquiring for a suitable person to fill the chair of surgery in the Medical College of Ohio, Professor Gibson, of the University of Pennsylvania, gave this unequivocal compliment: "In my opinion, Dr. Godman would do honor to any school in America." He was accordingly appointed; and arrived in Cincinnati the ensuing October, 1821, in time to enter on the duties of his office at the second session of the school. While here, his labors were satisfactory; his eloquence and genius charming those to whom he lectured. But difficulties were engendered among the faculty, and the prospects of the institution overcast. Dr. Godman, without being in the least involved in their differences, quietly resigned his chair.

After this, he directed his attention to a medical journal, proposals for which had been issued by Dr. Drake, but the distracted state of the institution preventing him from executing the design. With the assistance of Mr. Foote, a liberal and literary bookseller of Cincinnati, he succeeded in a few weeks, in issuing the first number of the *Western Quarterly Reporter*, the first medical Journal published in the Valley of the Mississippi. The work however, was discontinued after the sixth number, but for what cause, none other is given than the editor having returned to Philadelphia. It is most probable the patronage was insufficient to induce its longer continuation. It contained one hundred pages to a number, and more than three hundred pages were from Dr. Godman's own pen, chiefly in translations and reviews of anatomy, physiology, and medical jurisprudence. He remained in Cincinnati for a year; during which time he was fully occupied in pursuing his professional studies, and reading many works of general literature; he also studied the German and Spanish languages, and labelled the ancient coins and medals of the western museum. His practice was considerable for a stranger; and as his social relations were extended, he gained many new friends and admirers, the most grateful tribute genuine worth can receive.

At Philadelphia, he immediately began to lecture on anatomy and physiology, his favorite subjects; and so great was his success, that in 1826, he was called to Rutger's College, as an associate of Mott and Hosack.

In 1824, he was made one of the editors of the Philadelphia Journal of the Medical Sciences. A volume of his introductory lectures, which has been published, is generally known; these lectures are marked for their beauty and eloquence.

He was the writer of several elaborate analytical and critical reviews, in the American Quarterly.

At the present time, actual discoveries in anatomy are no more to be expected, yet Dr. G., with admirable skill, revealed many new connections and relations of certain parts, and described them in a volume which he entitled Anatomical Investigations.

He translated and published from the Latin, French, and German languages, a variety of papers and distinct treatises; several of them on subjects not professional, as for example, Lavasseur's Narrative of Lafayette's Visit to the United States.

He wrote critical and emendatory notes on several important English and continental works, which the booksellers of this country were about to publish.

The article of Natural History, in the Encyclopedia Americana, was exclusively confided to him, and his labors upon it ended only with his life.

He studied the Zoology of North America, both existing and fossil, and favored us with an interesting and extended history of all its own quadrupeds, embracing a great variety of new observations.

Such were the labors of the deceased, during the seven years that he resided in Philadelphia and New York. For the whole of that period, his life was one of unmitigated toil.

In the winter of 1827 and 8, he was seized with the disease of the lungs of which he finally died; in consequence of this attack he was compelled to suspend his lectures. In January following, 1829, he writes to Dr. Best:—

"My excessive exertion, and the exposure to a dreadful climate destroyed me. My lungs became diseased, and last winter, I was threatened with so rapid a decline as to force me to escape from the climate of New York, by going to the West Indies. The months of February, March, and April, my wife and I spent in the Danish Island of Santa Cruz, where I very nearly perished from my disease, though I certainly should have done so in New York. On my return to Philadelphia, in May, I took a house in Germantown, within seven miles from the city, where I have since resided. During the warm weather I was able to creep about, but since the first of the fall have been confined to a single room. My health during all this time has been in a very wretched state, and my *consumption* very obvious indeed, for I wasted to bones and lost all my strength. Until the last three weeks past, I was exceedingly low, unable to sit up, eat, or perform any function advantageously. Since the time mentioned, I have greatly recovered in all respects. My cough is by no means troublesome, and I eat and sleep well. What is best of all is that I have never had hectic since leaving New York, where I was not properly prescribed for. Notwithstanding all these drawbacks, I have had my family to support, and have done so merely by my pen. This you may suppose severe enough for one in my condition, nevertheless necessity is a ruthless master. At present, that I am comparatively well, my literary occupations form my chief pleasure, and all the regret I experience is, that my strength is so inadequate to my wishes. Should my health remain as it is now I shall do very well, and I cannot but hope, since we have recently passed through a tremendous spell of cold weather without my receiving any injury. All my prospects as a public teacher of anatomy are utterly destroyed, as I can never hope, nor would I venture if I could, again to resume my labors. My success promised to be very great, but it has pleased God that I should move in a different direction."

In the following year, continuing to write for the support of his family till the last month of his existence, he was taken from them, and in him they lost their all. Twelve years of unfaltering industry, that had carried his name into all the countries where science is cultivated, had not enabled him to accumulate property; and ended by consigning him to the grave, ere he reached the noon-day of life, or had put forth, to their full extent, the vast intellectual powers with which he was endowed. In all this, there is much more to grieve than astonish us. As a physician and surgeon, Dr. Godman's business was never considerable. At the very beginning of his professional career, his mind took a different direction. No human heart was ever embued with a deeper thirst for knowledge, or warmed with a nobler love of glory. He made the former subservient to the latter; but the objects of his ambition were teaching and writing, not the practice of his profession. Perhaps, indeed, he adapted the aims of his ambition to his taste. He relished reading, writing, lecturing, more than the practice of medicine; and sought to derive from them that emolument, which in this country, they seldom afford, and which can much more certainly be drawn from a close attention to the practical duties of the profession. Had he possessed a patrimony, this course would have been unexceptionable; without such a reliance, no young physician should neglect the means of acquiring professional business, at the outset of his career.

Dr. Godman was, without doubt, a man of genius; but he was not, perhaps, so much the expositor, as the historian of nature. Observing, imaginative, fluent and graphical, he abounded less in deep and original analysis than vivid and accurate delineations. Thus his mind, like that of Lucretius, Darwin and Good, was poetical and philosophical; and he left behind him several fugitive pieces, written chiefly in his last illness, which prove that he might have shone as the poet of nature, not less than her historian, had circumstances awakened his powers.

Having thus taken a condensed view of his life, which was written by Dr. Drake, and published originally in the Western Journal of Medical and Physical Sciences, we will here draw to a close, reserving his "Rambles" for our next number.

For the Advocate of Science.

ANSWERS TO BARBARA.

"1. Why is a heavy clap of thunder in a thunder gust often followed immediately by a sudden fall of rain?" Two causes may operate in producing this effect; the discharge of the electric fluid, and the concussion produced by the discharge. To part with its rain, a cloud must be in a certain condition with regard to its electricity; and the instantaneous production of the requisite condition by the electrical discharge, may cause a sudden precipitation of rain. Or, the concussion occasioned by the thunder may break the *vesicles* or little bubbles which compose the cloud, and produce the same influence. Very often the rain follows the thunder so quickly, that it is difficult to believe that sufficient time has elapsed for the action of either cause, and the subsequent descent of the rain to the earth. It deserves a thought, whether the cause may not be mistaken for the effect—that is, whether the fall of rain may not occasion the electrical discharge, the report of which reaches us before the rain. By this supposition it is presumed that the body of rain, while falling, acts as a medium for the transmission of the electric charge, which takes place just before the rain arrives to the earth, so that the two phenomena are almost simultaneous.

"2. Why do the thunder and lightning abate as soon as the rain begins to fall heavily?"

Answer: the rain appears to form a medium of communication between the thunder cloud and the earth, by which the fluid of the cloud is silently conveyed to the earth. Every drop has a tendency to equalize the distribution of electricity, by carrying a load of it from the cloud in its descent.

"3. Why are barns struck with lightning so much oftener than dwelling houses?"

Answer: the vapor or effluvium which rises from the hay or straw, attracts the fluid. This is especially the case when the hay has not been fully dried, and becomes heated in the barn. Besides, hay and straw are themselves good conductors of electricity, and therefore seem to attract the lightning. A rope of straw has been known to answer the purpose of a lightning rod in carrying off the stream of lightning from a barn.

"4. Why are trees so much shattered by a stroke of lightning, while houses and other objects often exhibit but a slight degree of the same effect?"

Answer: because trees are not good conductors of the fluid. In passing through a substance which does not conduct it freely, the lightning mostly has the same effect. After a tree has become wet with the rain, it is a better conductor, and therefore not so liable to be shattered.

"5. Why is a lightning rod so frequently struck with lightning, in contradiction of the theory that a point draws away the fluid silently?"

Answer: because a single point is not sufficient to draw off a large body of electricity in a moment. If, instead, of a single rod, or a rod with a single point, a great number of points were presented to the approaching cloud, it is presumed that the lightning would pass off silently. Even when the rod is struck, we may observe that the building is preserved, the rod conducting off the fluid without injury to the house. If the rod be imperfect, or if its inferior extremity be not properly placed, so as to invite the charge into the earth, the building is always liable to more or less injury.

"6. Why is a low chimney often struck by the side of a much higher one, which appears to be in every way more exposed?"

Answer: as a general rule, this is not the case, though sometimes it does so happen. It is not easily accounted for. We observe from the zigzag course of a stream of lightning, that the fluid is very easily diverted from a direct path by causes which we cannot perceive—perhaps an unequal distribution of moisture and heat in the air. The stroke thus chooses a very crooked path in reaching its destination. In the case referred to, most probably the precise object into which the stroke is to enter is not decided when the charge leaves the cloud, but is afterwards determined by some inci-

dental cause. We may even suppose that the higher chimney is the object aimed at, as it were, by the lightning, which coming in an oblique direction, passes not far from the lower chimney, into which it is diverted by some accidental influence. I am aware that several of the explanations I have given are merely hypothetical. But as Barbara has chosen to ask such knotty questions, she must put up with a little guess work in reply. It is probable some exception may be made to my notions, by somebody who has a better head for guessing, and who knows more about the inscrutable qualities of thunder and lightning. ÆOLUS.

For the Advocate of Science.

The confidant call from your correspondent Boreas, in relation to the formation of meteoric stones, would seem to indicate, that in his opinion at least, the rationale of the production of his aërial smoke could not *now* be questioned.

As he wishes to know what I say to his theory of smoke, I shall endeavor to show him its entire futility; and at the same time exhibit, I hope, to his satisfaction, the utter *impossibility* of smoke being produced from all or either of the substances, which we both admit to exist in the atmosphere. These are *carburetted hydrogen, carbonic acid gas* and aqueous vapor; with other incidental substances not needful to be connected with the consideration of this subject. It is not pretended by Boreas, that the aqueous vapor can be so affected as to produce smoke. He has wisely also, not attributed to carbonic acid gas, the property of being converted into smoke, for there is no substance present in the atmosphere having sufficient attraction for either of its elements, to be capable of separating them; and until they are separated, neither fire nor electricity can produce any change in it.

Carburetted hydrogen, the combustion of which according to Boreas, produces the smoke, is governed as well as all other gases by fixed laws; these laws must be infringed before Boreas' theory will be fixed, as I shall endeavor to show. This gas will not burn when mixed with the air, unless the mixture be in certain definite proportions. Then certain definite compounds are the result of this combustion or explosion; these are carbonic acid gas and water, only and invariably; consequently there can be no smoke. Again, if we suppose carburetted hydrogen to be confined, as in a reservoir for instance, and permitted to escape faster than the atmospheric air could be supplied, to support its combustion entirely, only so much of the carburetted hydrogen would be consumed, as received sufficient oxygen from the atmosphere, to have its hydrogen converted into water, and its carbon into carbonic acid gas; the extra portion of carburetted hydrogen would pass off unconsumed, and no smoke could be produced.

I cannot say where Boreas received his information, that smoke is produced by the combustion of carburetted hydrogen, when there is not a free supply of atmospheric air: but I do know, that it is inconsistent with the science of chemistry as taught and believed at the present day. But supposing it correct, the idea he seems to entertain that there might not be a sufficiently free supply of *air* in the *atmosphere*, to supply the combustion of the carburetted hydrogen, is quite laughable. I would wish him to consult some one of the late authors on chemistry, in relation to the nature of carburetted hydrogen, and see whether my remarks are not correct.

Whether I had smoke in my eyes as Boreas imagines, when I stated *his* belief to be, that *carbon* is emitted from vegetables, I shall give his text, and leave it for those not engaged in the *smoky* subject, to decide.—"Juvenis finds some difficulty in producing smoke from the exhalations of vegetables. These consist of carbon, hydrogen, and water." I do not *yet* see any other sense that *can be* given to this quotation, than that *carbon* is one of the exhalations. If he means *carbonic acid gas*, when he says *carbon*, he should have previously given us a description of his nomenclature; and then the deduction of his probable meaning, might not have elicited the charge of false representation on my part. In relation also, to my acceptation of his idea of the similarity or identity of smoke and pyroligneous acid, I shall leave to their better judgment. After telling us the different substances contained in the atmosphere, which are to produce the smoke, he says, "now smoke consists essentially of pyroligneous acid which contains nothing extraneous to these elements." That is to say, these elements are sufficient to compose *pyroligneous acid*. Now as the problem was to produce *smoke* from these elements, it seems as though either smoke or pyroligneous acid could be afforded, and yet they be *different*. This appears to be a reversion of the axiom, that like causes produce like effects.

As Boreas appears to have concluded, that I should make the meteoric stones of *his* selected ingredients, it may be proper before we proceed further to inform him, that the elements I should make use of, in case of an attempt at a theoretical manufacture have not been specified. The idea that they are produced by the union of oxygen, carbon and water, is not less unphilosophical and irrational, than are the reasons furnished by him for the production of smoke in the upper regions of the atmosphere.

When Boreas shall have perused the foregoing, I cannot think but that he will be dissatisfied with his assigned reasons for the production of smoke, and consequently I must *yet* feel myself excused from entering on the subject of meteorites. JUVENIS.

MISCELLANIES.

1. *The biter bit:—Curious Stratagem of the Mason Wasp.*—This wasp is well known to all who have taken any notice of insects. A friend relates an amusing anecdote of one he observed, apparently entangled in the web of a watchful spider, and struggling hard to free himself from his dangerous situation. The spider, whose pleasure, we may suppose, was great, in catching such a valuable prize, approached, with the usual cautiousness of its kind, to secure his game; but just as it was on the point of throwing its glutinous halter over the wasp, the latter suddenly disentangled himself, and pouncing on the spider, bore it off in triumph. After he had satisfactorily disposed of it, he made way for another web which had a fine large tenant, and repeating the same stratagem, soon carried him off to take a similar satisfaction from his hide.

2. *The Fox*—Canis *Volupes.*—Both in fable and history is the Fox proverbial for his cunning and sagacity. A remarkable illustration of these was related to us a few days since, which occurred in South Jersey; where they are very annoying to the chicken roosts of our honest farmers. To catch them requires great tact and consummate art. A method among others, which is used, is by fixing a steel trap to one end of a ten foot chain, the other being secured to a bush or stump, so as to be invisible. The chain is stretched out, and covered with sand, so nicely that not even a *man* would suspect its presence. The trap also is hid along their path, covered with dry leaves and sand, and every imprint of footsteps carefully erased from the place. To complete all, corn is strewed about in small quantities. As nice as all this may be done, it is nine times in ten, that the trappers, visiting the ground in the morning, not only find the steel trap sprung and the chain dug or pulled up, but both dragged in an opposite direction as far as the chain will permit.

3. *Portable Bee Hives.*—A citizen of Maine, named Baird, has a a patent for bee hives of a peculiar construction, in which he trades. A Quebec paper states that he arrived in that city with a load of hives, after a journey of twelve days, and made a cash sale of his stock amounting to two or three hundred dollars. In winter the hives are easily transported, the bees being then torpid. But in summer it is not so readily accomplished. The plan adopted by our ingenious and enterprising "Yankee" was to travel only by night, setting

out after the bees had come home from their days work, and opening the hive in the morning to allow the industrious insects to collect honey in the district of country where their proprietor spent the day.

4. *Singular habits and means of defence of Sea Animals.*—The Ocean is full of its countless millions, all miracles in their way, and according to their kind. Examine the torpedoes and electric eels, which, though in appearance abandoned in defencelessness, are in fact armed with a galvanic pile, and deliver themselves from their voracious enemies by palsying them with a thunderstroke. Whole shoals of fish spring out of the water and sustain themselves in the air, to avoid the pursuit of the gilt-head. The swift argonauts embark their elegant shells upon the waves, and sail in little fleets over the solitudes of the ocean. When they divine the approach of a storm, they submerge themselves to the bottom of the sea, and reappear only on the return of fine weather. The cuttle fish, when pursued emits a black ink, which forms a dense cloud in the water, in which it hides itself and escapes in obscurity. The doripes has received two paws longer than the other two, which it reaches up to sustain two sponges on its head. Concealed between them, it sinks unharmed to the bottom of the sea; where the hermit fish seats itself in an empty shell like Diogenes in his tub; and the little crabs squat themselves in their bivalve shells, and, tenants in common with the blind mollusca, stand in advance to warn the others of their danger.—*Flint's Lectures.*

5. *Antediluvian remains in America.*—In excavating the earth of the Portland and Louisville canal on the Ohio, at the depth of between twenty and thirty feet below the surface, the laborers came upon what appears to have been an ancient cemetery. It contained the bones of a great many human skeletons of a color nearly black. The bones, horns, and teeth, of various animals were found among them. One of the human skeletons was standing erect, holding in his hand a beautifully polished semiglobular stone of the size of half an orange. The color was striated with white and red. The hand that held the stone was raised at an angle of 45 degrees with the shoulder. Near these skeletons, and at the same depths, were the remains of regular hearths of brick and limestone. The limestone was beautifully polished, and the brick only so much unlike those in present use as to show that they were not made by the same people. The charcoal of the last fires that blazed on the domestic hearths of this generation of a past world, was found unchanged.—*Flint's Lectures.*

6. *A ten years nap.*—There are many well attested accounts of persons suffering under some disorder of the brain and nervous system, who have slept, or at least been in a state resembling sleep, for an extraordinary length of time. A statement of this kind was published some years since in the Official Gazette of Madrid, in the form of an affidavit, concerning a woman who had epileptic fits in 1809, at the age of 23 years, followed by a deep sleep which lasted three months. After this she enjoyed perfect health for several months, then she again fell asleep and continued so seven months. In 1815 she again fell asleep, and slept ten years. She lived however but six days after she awoke, her frame being exhausted. She remembered persons from their voice.

7. *How to manage an obstinate Horse.*—The celebrated traveller, Carr, relates that in some part of Europe it is the custom, when a horse is obstinate and refuses to move forward, to tie an ear of corn on a shaft projecting a little before the animal's nose. The hungry and refractory horse immediately commences the pursuit of the corn, and travels the whole day, stimulated by the constant hope of possessing himself of the delicious mouthful. We laugh at the stupidity and short sightedness of the brute; but many a man has spent his life time in similar pursuits, the folly of which would be almost apparent enough to an intelligent horse to make him laugh.

8. *Plato's definition of a Man.*—Philosophers and fools have perplexed themselves, almost since the foundation of the world, to discover some peculiar feature or distinctive character of the human animal, on which a concise definition of the word *man* may be founded. Some have described him as the only cooking animal, others, as the only one that employs tools—some as the only reasoning animal, others as the only talking one. Plato defined him to be, *a two legged animal without feathers.* The cynic, Diogenes, is said to have parodized this definition by picking all the feathers off a cock, and throwing the poor fellow into the midst of an assembly of learned disputants, exclaiming at the same time, "*There is one of Plato's men.*

9. *Comparison of the condition of the Ancients and Moderns.*—The great difference between the condition of the ancients and of the moderns of the civilized world, is owing in a great degree to the influence of a few discoveries and inventions, among which are the magnetic needle, the art of printing, and the manufacture of glass. Dr. Arbuthnot once remarked on this subject, that Augustus Cæsar, the emperor of the world, had not a shirt to his back, nor a pane of glass in his house. It is true, the ancient Romans were acquainted with glass, but they did not avail themselves of the benefits it confers.

10. *Grog Drinking.*—Dr. Willan of London made a calculation from the bills of mortality of that city, from which he infers that considerably more than one-eighth of all the deaths which take place in persons over twenty years of age, prematurely occur by excessive drinking of ardent spirits. In that great metropolis also, an annual sum of 3,300,000*l.* is required to feed its sober citizens with beer and drinks: 37,859,000 gallons of ale and porter; 11,146,782 gallons of spiritous liquors and compounds, and 32,500 tuns of wine are yearly consumed.

11. *Spacious Wine Cellar.*—An Englishman of the name of Mr. Vanhorn, in the space of twenty three years emptied 35,588 bottles, or 59 pipes of red port wine into his stomach. This would amount to more than four bottles and a tenth a day.

12. *Utility of Dancing.*—Much labor has been bestowed on dogs, apes, bears, elephants and many other animals with four legs, to teach them this fashionable art, that they might be so accomplished as to mingle in the higher classes of society. Pliny informs us the Sybarites were the first who undertook to teach the horse, and admit him to the ball room. Their efforts succeeded admirably; for in a war with the inhabitants of Crotona, the enemy having instructed their trumpeters to sound the usual charge in a pitched battle, the horses of the Sybarites fell to dancing instead of advancing to the charge, and were cut in pieces together with their riders.

13. *Turkish Execution.*—One morning I accidentally became a witness of an execution. The executioner took off the turban, tied up Mohammed's lock, and adjusted the denounced head in the most favorable position for displaying his skill, desiring its owner to hold it steady. This preparation did not occupy two minutes, during which it was uncertain which of the two showed greatest coolness. Drawing then his ataghan, the executioner held it up in act to strike, and in this position recited the offence—"conspiracy," &c. It was an awful picture, a moment of breathless excitement to all present excepting the two actors, the one of whom, the most interested in the event, appearing the most careless. Being close to him, *malgre moi*, I watched him narrowly, but could not perceive the slightest change in his florid countenance, or a tremor in his fine limbs. Both at such a crisis would have been pardonable in the boldest. Having heard his sentence, he cried in a firm voice, "O Mohammed, I die innocent; to thee I consign my soul." He repeated these words, with some others to the same purport, when the finisher of the law, impatient, demanded, "Are you ready?" The gallant fellow, with an energy of tone which showed that his spirit already saw the "dark eyed girls," promptly answered, "Ready." The moment after, his head, struck off by one blow, was rolling in the dust. The blood instantaneously gushed out of the body, the neck slightly palpitated: life vanished with the rapidity of thought.—*Slade's Travels in Turkey*, 1831.

AGENTS.

ADAMS, Mass.—*P. Briggs*, P. M.
BRISTOL, Pa.—*Anthony Swain.*
FRANKFORD. Pa.—*John Griscom.*
MOUNT HOLLY, N. J.—*Samuel Bullock.*
MORRISVILLE P. O. Pa.—*Hector C. Ivins.*
POTTSVILLE, Pa.—*Elihu Pedrick.*
BALTIMORE, Md.—*Joseph Earnest, No. 40 S. Eutaw Street.*
ALEXANDRIA, D. C.—*Henry Stabler.*
WASHINGTON, D. C.—*William C. Ellison.*
DARBY, Pa.—*John Sellers Jr.*
WEST CHESTER, Pa.—*Samuel Paynter.*
VALLEY FORGE, Pa.—*Maurice Richardson.*
MARCUS HOOK, Pa.—*Robert R. Dutton.*